| Work Orde January-02-13 3 | | 206 | | *952 | 206* | | | | | | Page 1 |
|---|--------------------|--------------------------------------|------------------|------------------------|-----------------------|--------|--------------|---------------|------------------|------------------|----------------|
| Revision ID: | D3066-1 Spacer | | | Accept | *N900 |)040 | 100 |)* s | etup Stai | I M | S1* S2* |
| Start Date: 2 Required Date: 2 Reference: | 2/11/13 2/11/13 | Start Qty: 40.00 Req'd Qty: 40.00 | | | Cust Item Customer | | | | | | |
| Approvals: | Process Pla | 7(| Date:/3-01-1 | Tooling: SPC (Y/N): | | Date: | | R | un - Stai Sto | " [V] | R1* R2* |
| Sequence ID/ Work Center ID | | Operation Description | | Set Up/ Run Hours | Tool ID | Tool # | Plan Code | Accept Qty | Reject Qty | Reject Number | Insp. Stamp |
| Draw Nbr | Rev | ision Nbr | | | | | | | | | |
| D3066 | Rev | В | | | | | | | | | |
| *100 *100* Waterjet | | FLOW WATER JET Memo | | 0.00 | | | - | _3 | . | | 1813-1-33 |
| FLOW CNC Waterje | ot . | Dwg Rev: Prog Rev: | | | | | | | | | |
| *110 | | QC2- Inspect parts off | machine FAI/FAIB | 0.00 | | | | (8) | \ | | 13-1-77 |
| QC Quality Control | | Memo | | 0.00 | | | | | <i></i> | | 1013 |
| 120 *12 0 * | · | QC8- Inspect parts - se | econd check | 0.00 AS 15 | · · | | | 53 n | | | |
| QC Quality Control | | Memo | | 0.00 | ∀ | | | coin | | - | <u> </u> |

| DQA: | Date: | |
|------|-------|--|
| | | |

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

| IVCIV. IV | es / 1 10 | | | | WORK ORDER HORE | | (IVIAITEL / OI | DATE | QA Closed: | Date: | |
|--------------|-------------------|-----------|------------|----------------|--------------------------------|-------------|--------------------------------|---------------------|--------------|--------------------------|---------------------|
| Work Orde | r: | | | | DISPOSITION | | | AGAINST DE | PARTMENT | /PROCESS | |
| Part No | | | _ | | Rework Scrap | | Skid-tube Machining | Crosstube Small Fab | 4 | Water Jet d. Eng. Coor. | Engineering Quality |
| NCR N | 0 | | | | Use-as-is Work Order Update | The | rmoforming Large Fab | FinishingComposite | Rec/Stor | re/Packaging Supplier | Other |
| Root | | | | Descri | ption of work order update | Initial | А | ction | Sign & | | |
| Cause | Date | Step | Qty | (| or Non-conformance | Chief Er | g Des | scription | Date | Verification | QC Inspector |
| Doc/Data | | | | | | | | | | | |
| quip/Tooling | | | | | | | | | | | |
| Operator | | | | | | | | | | | |
| Material | | | | | | 1 | | | | | |
| etup | | | | | | | | | | | |
| Other | | | | | | | ŕ | | | | |
| rocess | | | | | | | | | | | |
| upplier | _ | | | | | | | | | | |
| raining | | | | | | | | | • | | |
| Inapproved | | l | | - | | <u> </u> | | | | | |
| | | | - | | | AULT CA | regory | | | | |
| Landin | - | | | - | General | Пa . | | _ | ٦ ، | | ٦ |
| - | Bending | | | ~ | Bend | Grain | | <u> </u> - | Ovalized | L | Pressure/Forced |
| } | Centre N | ot Concei | ntric to (| ^{5/5} | BOM/Route | Hard | | - | Over/Under | | Temperature/Cure |
| - | Cracks | C | | - | Broken/Damaged | | ction Incomplete | -/// | Part Incorre | - | Weld |
| - | Crushed/ Cuffs | Crimpea, | | - | Burrs | - | ictions Incomplete Itenance | :/Unclear | Part Lost/M | | Wrong Stock Pulled |
| } | Heat Trea | | | \vdash | Contamination Countersink | | heled beled | <u> </u> | Part Moved | | |
| } | Inspectio | | Tubo | - | Cut Too Short | Misre | | <u></u> | Positioned \ | | Other |
| - | Ripples in | • | Tube | - | Drill Holes | Offse | | L | Trower ross/ | onige | Other |
| - | Torque W | | vtrucio | <u>,</u> | Drawing | ├ | of Calibration | | | | |
| | Turning S | | | ' | Finish | | of Sequence | | | | · |
| - 1 | Transing 2 | CHUCHICE | | 1 | li uusu | 1 Jours | A SCHUCITUE | | | | |

Outside Dimensions

Wave/Twist in Tube

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Order ID 95206 Page 2 January-02-13 3:17:00 PM Item ID: D3066-1 Accept *N900040100* Setup Start **Revision ID:** Stop Spacer Item Name: **Start Date:** 2/11/13 **Start Qty: 40.00 Cust Item ID:** Required Date: 2/11/13 **Req'd Qty:** 40.00 **Customer:** Reference: Start Run Process Plan: Date: Tooling: **Approvals:** Date: Stop Date: SPC(Y/N): Date: Sequence ID/ Operation Set Up/ **Tool ID** Tool # Plan Reject Accept Reject Insp. Description Work Center ID Qty **Run Hours** Code Oty Number Stamp 130 Chemical Conversion Coat per QSI005 4.1 0.00 76 13-1-23 *120* HandFinish 0.00 Memo Hand Finishing 140 QC3- Inspect Part Finish 0.00 *140* 0.00 Memo Quality Control Identify as per dwg & Stock Location: WA 150 0.00 50 B Ac 13-01-23 *150*

0.00

Memo

*** STOCK IN STEP CELL***

Packaging

Packaging

| | | DQA: | Date: | |
|-----------|--------------------------------------|------|-------|--|
| | | | | |
| N / N | MADE ODDED MON CONFORMANCE / LIDDATE | | | |

| NCR: \ | Yes | / No | | | | WORK ORDER NON-C | CONI | -OKI | MANCE / UP | | QA Closed: | Date | : |
|----------------------|----------|------------|----------|----------|------------------------------|----------------------------|----------|---------------------|-------------------------------|--|--------------|---------------------------------------|--------------------|
| Work Orde | or. | | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | /PROCESS | |
| Part No. | | | | | Rework Scrap Use-as-is | Scrap | | | Crosstube Small Fab Finishing | Water Jet Prod. Eng. Coor. Rec/Store/Packaging | | Engineering Quality Other | |
| NCR N | No | | | , | | Work Order Update |] | | Large Fab | Composite | | Supplier | |
| Root | Ī | | | | Descri | ption of work order update | Ini | tial | Ac | tion | Sign & | | |
| Cause | | Date | Step | Qty | (| or Non-conformance | Chie | f Eng | Desc | ription | Date | Verification | QC Inspector |
| Doc/Data | Ш | | | | | | | | | | | | |
| Equip/Tooling | Ш | | | | | | | | | | | | |
| Operator | Ц | | | | | | | | | | | | 50° |
| Material | Ш | | | | | | | | | | | | 7.7 |
| Setup | Н | | | | | | | | | | | | |
| Other | \dashv | | i | | | | | | | | | | ; |
| Process | Н | | | | | | | | | | | 1 | |
| Supplier Training | H | | | | | | | | | | | • | |
| Unapproved | Н | | | | | | | | | | | | |
| опарргочец | <u> </u> | | l | . | | F | AULT | CATE | GORY | | <u> </u> | 1 | |
| Landi | ng G | ear | | | | General | | <u> </u> | | | | | |
| | | Bending | | | | Bend | | irain | | | Ovalized | Γ | Pressure/Forced |
| | \Box | Centre No | t Concer | ntric to | o/s | BOM/Route | Пн | lardwa | re | | Over/Under | tolerance | Temperature/Cure |
| | | Cracks | | | | Broken/Damaged | Ir | nspecti | on Incomplete | | Part Incorre | ct | Weld |
| | | Crushed/0 | Crimped. | | | Burrs | ∏ lr | nstruct | ions Incomplete/ | 'Unclear | Part Lost/M | issing | Wrong Stock Pulled |
| | | Cuffs | | | | Contamination | | /lainte | enance | | Part Moved | | |
| | | Heat Trea | t | | | Countersink | <u></u> | ∕iislab∈ | eled | | Positioned \ | Wrong | |
| | - | Inspection | | Tube | | Cut Too Short | ∐^ | ⁄lisread | t | | Power Loss/ | /Surge | Other |
| | — | Ripples in | | | | Drill Holes | | ffset | | | | · · · · · · · · · · · · · · · · · · · | |
| | \vdash | Torque W | | | n | Drawing | \vdash | | Calibration | | | | |
| | 1 1 | Turning Se | equence | | | Finish | | ot of $\mathfrak s$ | Sequence | | | | |

Outside Dimensions

Wave/Twist in Tube

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Sequence ID/ **Work Center ID** Operation Description Set Up/ **Run Hours** Tool ID

Tool # Plan Code

Reject Accept Qty Qty

Reject Number Stamp

Insp.

Page 3

160 *160*

QC

Memo

QC21- Final Inspection - Work Order Release

0.00

0.00

Quality Control

me 13-1-24

| | | | | | | | | | | | | DQA: | Dat | te: | |
|---------------|-------------|-------------------|------------|----------|----------------|----------------------------|----------|-----------|------------------|-----------|---------------|----------------------------|---------------|----------|--------------------|
| NCR: | Yes | / No | • | | | WORK ORDER NON- | COI | NFORM | MANCE / UP | DATE | | • | , | | |
| | | | | | | | | | · | | • | QA Closed: | Dat | te: | |
| Work Ord | ler | | | | | DISPOSITION | | | | AGAINST D | EF | PARTMENT | PROCESS | | |
| l Work ore | | | | | · | Rework | 1 | | Skid-tube | Crosstube | \neg | | Water Jet | | Engineering |
| Part | No. | | | | | Scrap | 1 | ı | Machining | Small Fab | | Pro | d. Eng. Coor. | | Quality |
| | | | • | | | Use-as-is |] | Therm | noforming | Finishing | | Rec/Stor | e/Packaging | | Other |
| NCR | No. | | | | | Work Order Update |] | | Large Fab | Composite | | | Supplier | | |
| Root | | | 1 | 1 | Doscri | ption of work order update | | nitial | Λ. | tion | 1 | Sign & | | | |
| Cause | | Date | Step | Qty | | or Non-conformance | 1 | ief Eng | | cription | | Date | Verification | n | QC Inspector |
| Doc/Data | · | Date | Step | Qty | | of Worr-comormance | | ilei Liig | Desc | ription | \dashv | Date | vermeation | | QC IIISPECTOI |
| Equip/Tooling | <u>,</u> - | | | | | | | | | | | | | | |
| Operator | <u>`</u> | | | | | | | | | | | | | | |
| Material | | | | | | | | | | | 1 | | | | |
| Setup | | | 1 | | } | | | | | | 1 | | | | |
| Other | | | | | | | | | | | 1 | | | | |
| Process | | | | | | | 1 | | | | | | | | |
| Supplier | | | | | | | | | | | | | | | |
| Training | | | | | | | | | | | • | | | | |
| Unapproved | 1_ | | | İ | | | <u> </u> | | | | | | | | |
| <u> </u> | | | | | | | AUL | T CATE | GORY | | | | | | |
| Land | ling (| 1 | | | _ | General | _ | 1 | | Г | 1 | l | 1 | | 1 |
| | \vdash | Bending | | | _ | Bend | | Grain | | <u> </u> | | Ovalized | | <u> </u> | Pressure/Forced |
| | - | Centre No | ot Concei | ntric to | ^{0/5} | BOM/Route | \vdash | Hardwa | | - | | Over/Under | | | Temperature/Cure |
| | \vdash | Cracks | C: | | - | Broken/Damaged | <u> </u> | 1 ' | on Incomplete | // / | \dashv | Part Incorred | 1 | _ | Weld |
| | \vdash | Crushed/ Cuffs | crimpea. | | - | Burrs Contamination | - | Mainte | ions Incomplete, | Onclear | \rightarrow | Part Lost/Mi Part Moved | ssing | <u> </u> | Wrong Stock Pulled |
| | \vdash | Heat Trea | at . | | - | Countersink | \vdash | Mislabe | | - | -4 | Part Moved Positioned V | Vrong | | |
| ĺ | - | 1 | n Strip in | _ | <u> </u> | Cut Too Short | — | Iviisiane | icu | ļ | | Power Loss/ | _ | _ | Other |

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

January-02-13 3:17:00 PM

Work Order ID:

95206

Parent Item:

D3066-1

Parent Item Name:

Spacer

Start Date: 2/11/13

Required Date: 2/11/13

Page 1

Start Qty: 40.00

Required Qty: 40.00

Comments:

IPP: C02.11.01Incorporated D3066-1 IPPKJ/RF IPP Rev: B Now M6061-T6 06-06-23 ILM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|------------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| M6061T6S.080 6061-T6 .080 Sheet | | Purchased | No | | | 100 | sf | 375.7686 | 0.0945 | 3.978948 | 6, B13: | -1-22 | |
| | | | | Location | | Loc Qty | Lo | c Code | | | | | |
| | | | | MAT021 | | 375.768632 | | | | | | | |
| | | | | 1172 | 85 | 0.248632 | | | | | ا 🖈 | | |
| | | | | 1197 | 66 | 41.32 | | | | | 13 | | |
| • | | | | 1200 | 96 | 168.8 | | | | | <i>39</i> | | |
| | | | | 1232 | :79 | 165.4 | | | 133 | 279 | | | |

| | | | | DQA: |
|------|-------|----|-------------------------------------|------|
| NCR: | Yes / | No | WORK ORDER NON-CONFORMANCE / UPDATE | |

| NCR: Y | es / No | | | | WORK ORDER NON-O | CONFO |)RN | /IANCE / UPI | DATE | | | |
|--------------|------------|------------|----------|--------|----------------------------|---------|-------|-----------------|------------|--------------|---------------|--------------------|
| | | | | | | | | | | QA Closed: | Date | • |
| Work Orde | r: | | | | DISPOSITION | | | | AGAINST DE | PARTMENT | PROCESS | |
| | | | | | Rework | | | Skid-tube | Crosstube | | Water Jet | Engineering |
| Part N | o | <u>.</u> | | | Scrap |] | Ν | Machining | Small Fab | Pro | d. Eng. Coor. | Quality |
| | | | | | Use-as-is | Th | | oforming | Finishing | Rec/Stor | e/Packaging | Other |
| NCR N | 0 | | | | Work Order Update |] | | Large Fab | Composite |] | Supplier | |
| Root | | | | Descri | ption of work order update | Initia | al | Act | tion | Sign & | | |
| Cause | Date | Step | Qty | | or Non-conformance | Chief E | ng | Desci | ription | Date | Verification | QC Inspector |
| Doc/Data | | | | | | | | | | | | |
| quip/Tooling | | | | | | ŀ | į | | | | i | |
| Operator | | | | | | | - 1 | | | | | |
| Material | _ | | | | | | ł | | | | | |
| Setup | | | | | • | | | | | · | | |
| Other | | | | | | | | | | | | |
| Process | | | | | | | | | | | | |
| Supplier | | | | | | | | | | | · | |
| Training | | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | | |
| | | | | *** | F | AULT CA | ATEC | GORY | | | | • |
| Landin | g Gear | | | | General | | | | | 7 | _ | _ |
| | Bending | | | | Bend | Gra | | | | Ovalized | <u> </u> | Pressure/Forced |
| ļ | Centre No | ot Conce | ntric to | o/s | BOM/Route ` | Hard | dwa | re | | Over/Under | tolerance | Temperature/Cure |
| Ĺ | Cracks | | | | Broken/Damaged | Insp | ecti | on Incomplete | | Part Incorre | ct _ | Weld |
| | Crushed/ | Crimped. | | _ | Burrs | Inst | ructi | ons Incomplete/ | Unclear | Part Lost/Mi | ssing | Wrong Stock Pulled |
| | Cuffs | | | | Contamination | Ma | inte | nance | | Part Moved | | |
| | Heat Trea | at | | | Countersink | Mis | labe | led | | Positioned V | Vrong | _ |
| | Inspection | n Strip in | Tube | | Cut Too Short | Mis | read | | | Power Loss/ | Surge | Other |
| | Ripples in | Bend | | | Drill Holes | Offs | set | | _ | | | |
| | Torque W | /aves in E | xtrusio | n [| Drawing | Out | of C | Calibration | | | | |
| | Turning S | equence | | | Finish | Out | of S | equence | | | | |
| Ī | Wave/Tw | ist in Tub | oe . | | Folio | Out | side | Dimensions | | | | |

Date:

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

| DART AEROSPACE LTD | Work Order: | 95206 |
|------------------------------|--------------|-------------|
| Description: Spacer | Part Number: | D3066-1 |
| Inspection Dwg: D3066 Rev: B | | Page 1 of 1 |

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

| Drawing Dimension | Tolerance | Actual Dimension | Accept | Reject | Method of Inspection | Comments |
|----------------------|------------------|---------------------|--------|--------|-------------------------|----------|
| Ø0.128 | +0.005 -0.000 | 861, | 2 | | V B12 | |
| 0.708 | +/-0.010 | _710 | 2 | | V | |
| 0.354 | +/0.010 | ,354 | 2 | | V | |
| 0.354 | +/0.010 | 355 | 2 | | V | |
| 2.250 (Pitch) | +/-0.005 | 2.755 | 2 | | V | |
| 16.450 | +/0.010 | 16,450 | è- | | T BOI | |
| 0.080 | +/-0.010 | ions | 2 | | LV | |
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Measured by: B Audited by: 15 Prototype Approval: N/A

Date: 13 1 2 D Date: N/A

| Rev | Date | Change | Revised by | Approved |
|-----|----------|-------------------------|------------|----------|
| Α | 03.09.22 | New Issue P/O D3065-041 | KJ/RF | |
| В | 06.06.23 | Dwg Rev. changed | KJ/JLM 🖟 | |
| | | | | / / |



| | DESIGN A DRAWN BY | | DRAWN BY | DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA | |
|--|-------------------|----------|-------------|--|--------------|
| | CHECK | ED | APPROVED,,, | DRAWING NO. | REV. B |
| | | 817 | THE SHOP | D3066 | SHEET 1 OF 1 |
| | DATE | | | TITLE | SCALE |
| | 06.05.29 | | J5.29 | SPACER | 1:3 |
| | Α | 02.09.11 | | NEW ISSUE | |
| | В | 06.05.29 | | ADD 6061-T6 MATERIAL | |

95204 pl 13-01-1

RELEASED

> 16.096 16.450

R0.354 (TYP)

D3066-1 SPACER

1) MATERIAL: 6061-T6 (PER QQ-A-250/11 OR AMS 4025 OR AMS 4027) 0.080" THICK (REF DART SPEC M6061T6S.080)

OR

5052-H32/H34 (PER QQ-A-250/8 OR AMS 4016) 0.080" THICK

(REF DART SPEC. M5052H32S.080)

2) FINISH: ACID ETCH & ALODINE PER DART QSI 005 4.1

 ϕ 0.128 (#30) (TYP 8 PLACES)

3) BREAK ALL SHARP EDGES 0.005 TO 0.010 4) PART IS SYMMETRIC ABOUT CENTERLINE

5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

0.708

0.354 -

6) ALL DIMENSIONS ARE IN INCHES

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